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STATE OF SOUTH CAROLINA

REPORT

OF THE

STATE COMMISSION OF FORESTRY

FOR THE YEAR

October 1, 1930 to September 30, 1931

H. A. SMITH, State Forester



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STATE DOCUMENTS

COLUMBIA, S. C.
October 15, 1931

PRINTED UNDER THE DIRECTION OF THE
JOINT COMMITTEE ON PRINTING
GENERAL ASSEMBLY OF SOUTH CAROLINA

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An extract from the inaugural address of Governor Ibra C. Blackwood, January 1931:

"There is, in my opinion, a boundless range of wealth embraced in the wooded stretches, swamps and wilds of our state and it behooves us with all vigilance to protect and preserve them. We should eagerly seek such appropriations as the Federal government is disposed to make to develop the dormant resources of our rural districts, such as the draining of swamps, conserving highlands from erosion and the reforestation of our depleted timber lands to the end that at some time not distant in the future we might have a vast wealth where there is now waste."

MEMBERS OF THE STATE COMMISSION OF FORESTRY

(Appointed by the Governor)

H. L. TILGHMAN, Chairman, Marion, S. C.

B. S. MEEKS, Vice-Chairman, Florence, S. C.

DR. E. W. SIKES, Clemson College, S. C.

COL. W. H. ANDREWS, Andrews, S. C.

PAUL V. MOORE, Spartanburg, S. C.

STATE FOREST SERVICE

H. A. SMITH, Secretary to the Commission and State Forester
Columbia, S. C.

MRS. EDITH GIBBES SCARBOROUGH, Secretary to State Forester,
Columbia, S. C.

N. T. BARRON, Assistant State Forester, Columbia, S. C.

D. Y. LENHART, District Forester, Florence, S. C.

W. R. DUNLAP, District Forester, Walterboro, S. C.

H. Y. FORSYTHE, District Forester, Aiken, S. C.

W. C. HAMMERLE, District Forester, Spartanburg, S. C.

L. M. STALEY, Nurseryman, Camden, S. C.



THE RAPID DEPLETION OF TIMBER STANDS SUCH AS THIS ONE NEAR CHERAW INDICATE THE NECESSITY FOR PROMPT ACTION DIRECTED TOWARDS THE PRESERVATION OF YOUNG GROWTH FOR FUTURE USE.

TABLE OF CONTENTS

	PAGE
Letter of Transmittal	4
Gov. Ibra C. Blackwood on Forestry	5
The State Commission of Forestry	6
Report	7
Administration	7
The Commission	7
The State Forester	7
The State Forest Service	7
Finances	8
Sources of Funds	9
Financial Statement	11
Forest Protection	13
An Analysis of the Protection Problems	13
The States Program	13
Cooperative Forest Protection	13
Protective Units Proposed	15
Financing the Unit	15
Law Enforcement	15
Education	16
The Southern Forestry Educational Prospect	16
Public Schools	17
Vocational Agricultural Schools	17
4-H Clubs	18
Fairs and Exhibits	19
Special Meetings	19
Publications	20
Applied Forestry	21
The State Forest Tree Nursery	21
Distributions of Forest Tree Seedlings	21
Summary of Accomplishments of State Commission of Forestry..	25
Recommendations for the Future	26
The Land Problems in South Carolina	27

LETTER OF TRANSMITTAL

To Hon. Ibra C. Blackwood, Governor, and to the General Assembly of South Carolina.

Sirs: Pursuant to Section 3 of the Act of Assembly creating the State Commission of Forestry, approved April 26, 1927; which provides that the Commission shall "inquire into and make annual report upon forest conditions in South Carolina, with reference to the preservation of forests, the effect of the destruction of forests upon the general welfare of the State, and other matters pertaining to the subject of forestry and tree growth, including recommendations to the public generally as to reforestation," I have the honor to submit the report of the Commission for the period October 1, 1930 to September 30, 1932.

Respectfully submitted,

STATE COMMISSION OF FORESTRY,

H. L. TILGHMAN,

Chairman.

REPORT

The work of the State Forestry Commission for the period October 1, 1930 to September 30, 1931, the period of this report, has been divided into six major headings: Administration, Finances, Forest Protection, Education, Applied Forestry and Forestry in the Counties.

ADMINISTRATION

Commission.

The State Forestry Commission was established by an act of the legislature dated April 26, 1927 and signed by Governor John G. Richards. Five members comprise this commission, two being practical lumbermen, one a farmer and landowner, one appointed from the public at large and one the President of Clemson College. Members of this commission serve without pay, receiving only actual expenses. In the more than three years following the organization of the board the total expenses of the five men have been \$145.58, or less than \$10.00 a year per man.

The State Forester.

According to the act creating the commission the State Forester to be appointed by the commission was required to be a "technically trained forester, with at least two years experience in technical and practical administrative work." Lewis E. Staley, the first State Forester, resigned January 1, 1931 to return to Pennsylvania as Secretary of the Department of Forests and Waters in that state. He was succeeded by H. A. Smith, who was serving as Assistant State Forester in Florida and who prior to that service had spent twelve years with Mr. Staley and Governor Pinchot in the Pennsylvania service.

The State Forest Service.

The State Forest Service is the general term applied to the State Forester, the personnel of the Columbia office and the field force employed by the State Forest Commission. This includes the Secretary to the State Forester; the Assistant State Forester in charge of Applied Forestry, the Nursery and Education Work; Four District Foresters located at Spartanburg, Florence,

Other Equipment	1,101.95	
Educational Equipment	31.75	
Insurance	35.00	
Reimbursements	6,480.06	
Rent	431.00	
Lights	6.85	
Refunds and Contingencies	14.00	\$51,606.61
		<hr/>
Balance September 30, 1931		\$13,489.10



A FOREST FIRE FIGHTING TRUCK CARRYING 200 GALLONS OF WATER AND SPRAY TANKS, RAKES AND SWATTERS FOR 20 MEN WAS CONSTRUCTED BY THE AIKEN COUNTY FOREST PROTECTIVE ASSOCIATION FOR FIRE CONTROL WORK.

FOREST PROTECTION

An Analysis of the Protection Problem:

Approximately 5,000,000 acres out of a total of 12,800,000 acres of forest land are owned by individuals or companies who are sufficiently interested in forest protection to pay a certain percentage of the total cost of protection. Where such an interest is lacking the State can do little. Without that interest any protective organization set up by the State would find itself handicapped by lack of co-operation from tenants and employees and areas saved from fire on one day would in all probability be burned over by new fires set out the next day. The desire of the owner is the controlling factor in forest protection and the best evidence of that desire is the financial participation of the owner in protection costs.

The remaining acreage in the State is in an ownership lacking interest in protection for several reasons. A very small portion really believes in burning. A larger acreage is held for sale or is in the hands of banks open to sale. Some is in absentee ownership and large acreages are held as game preserves with the owners practicing light burning for game management.

The total annual cost of statewide protection of all forest land including prorated charges for capital investments has been estimated at \$413,000. This fact together with the almost insurmountable difficulties concerned with securing protection where interest on the part of the property owner is lacking argues very strongly against any statewide protection at the present time.

The State's Program:

Two courses then remain open to the state. One is to provide protection to those property owners actually interested in protection and demonstrating that interest through payment of their share of the cost and the other is intensive statewide educational work designed to illustrate the damages by woods burning, the method whereby woods fires may be prevented, and the value of woodland management and reforestation.

Co-Operative Protection:

The State Forestry Commission is proceeding along the two courses mentioned above. Where property owners interested in

protection, representing 30,000 acres fairly well blocked together, are willing to pay one-half the estimated cost of protection of that area, the State and Federal Government will at its own expense erect a fire tower capable of providing detection over the area and in addition will bear the other half of the cost of protection, including cost of ranger, towermen, wardens, fire fighters and tools and equipment for fire extinction.

Where the area to be protected is not sufficient to warrant the cost of a tower and where the location and attitude of the owners is sufficient to justify it, the State and Federal governments will assist financially and will aid in organizing and equipping secondary protective units for fire control work.

Eight primary protective units have already been established, totaling 534,000 acres. One hundred and fifty thousand acres have been mapped in readiness for protection this fall and it is estimated that an additional 500,000 acres will be ready to be placed under protection when funds become available. In the calendar year ending December 31, 1930 the loss by fire upon the area under protection was less than 1% of the area protected. Three fire towers have already been erected and four more are contemplated for this coming season should the organizations be completed. The slight loss from fire on the protected areas where previously the entire area had burned over, together with the fact that no single co-operator has withdrawn from his agreements testify as to the success of co-operative protection in South Carolina.

The 700,000 acres where it is felt there is an immediate demand for co-operative protection lie in twelve different counties in South Carolina. The units already under protection, together with those proposed will serve as the show windows of Forestry as the timber matures under protection. The effect of these show windows together with the general educational work being carried on will serve to bring in large acreages at the present time classed as not interested, until eventually the entire community, then the county and then practically the entire State will be brought under protection. In the meantime, however, by reason of the attitude of property owners and the limited funds available, the protective units must serve as the first line of defense and that line must be held at all reasonable cost. It is from

these units that the possibilities in fire control can be best advertised.

Protective Units Proposed:

The new units proposed for organization this fall are as follows:

Jasper County near Ridgeland	30,000 acres
Greenville and Pickens Counties	40,000 acres
Williamsburg and Georgetown Counties	40,000 acres
Aiken County Extension	40,000 acres
Kershaw County Extension	40,000 acres

Financing the Unit:

Final completion of these units depends upon final organization of the owners and the funds available. The total cost to the State for establishing a 30,000 acre protective unit and operating it for one year will be approximately \$2,300. The cost thereafter to the State will be operation cost only, amounting to approximately \$600 a year. The cost to the property owners from the beginning will be about \$600 a year, or at the rate of two cents per acre per year. With the establishment of such a unit and the erection of the fire tower all properties within a radius of nine miles of the tower will be eligible for membership in the association.

Thus approximately one-half the operating costs of such a unit are borne by the property owners. The other half is borne by the State, with one-fourth coming from the State Treasurer and one-fourth from the Federal government.

Law Enforcement:

Two prosecutions were brought by the State Forest Service for carelessly setting fires to woodlands. In Fairfield County the defendant was sentenced to 30 days on the gang, but the sentence was suspended with the consent of the land owner damaged. In Williamsburg County the defendant was sentenced to 30 days on the gang for the same offense.

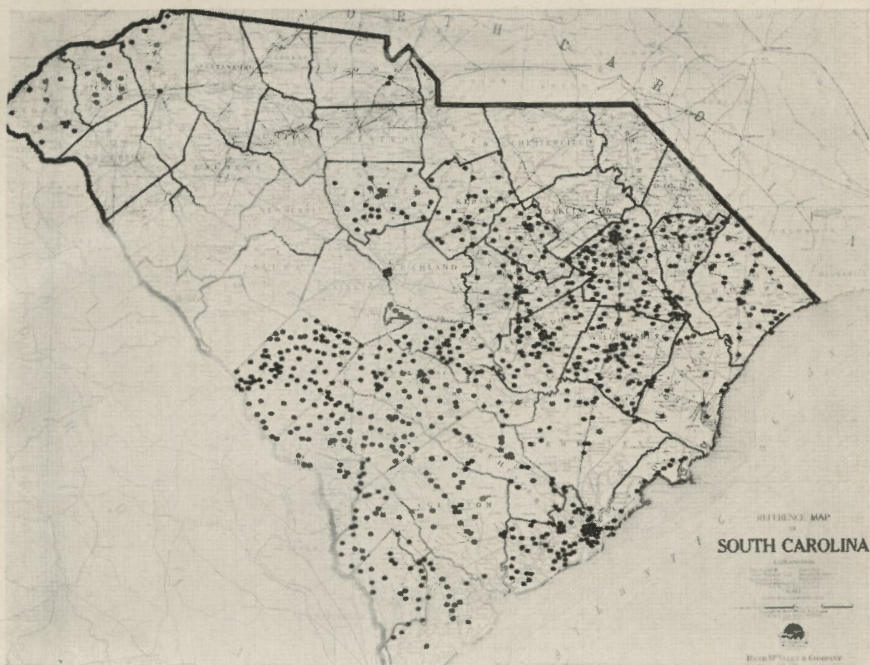
EDUCATION

The Southern Forestry Educational Project:

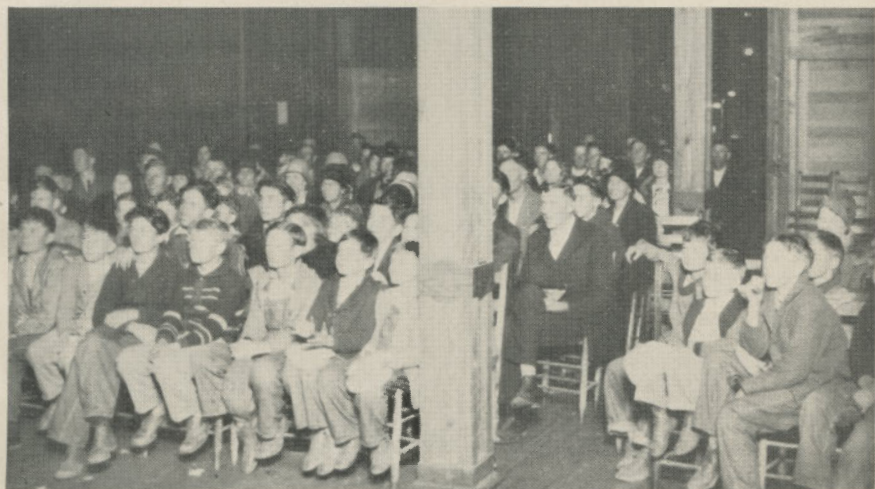
The State Forestry Commission entered into a co-operative agreement with the American Forestry Association in the winter of 1931 under the terms of which \$16,250 were spent for educational work in South Carolina, of which \$10,000 was provided by the American Forestry Association. The total amount of \$16,250 was recognized by the Federal government, which reimbursed the State Forestry Commission in the amount of \$8,125. Two completely equipped motion picture trucks were added to the truck already in use by the State Forestry Commission. These trucks were fully equipped with their own generating plant, motion picture machines and many thousands of feet of films especially taken in the South for the use of the project. In addition the project provided book covers and rulers for school children and thousands of pieces of literature on the evils of woods burning—all told 908 shows and lectures were given in 28 different counties in the State, with a total attendance of 148,918. Ninety-two thousand pieces of literature and 103,000 rulers were distributed. The following table lists the counties visited, with the number of shows and attendance.

County	No. Shows and Lectures	Total Attend.	County	No. Shows and Lectures	Total Attend.
Aiken	86	11,567	Hampton	25	4,522
Allendale	13	2,236	Horry	41	7,006
Bamberg	30	4,226	Jasper	38	4,735
Barnwell	26	4,033	Kershaw	30	4,948
Beaufort	6	1,539	Lee	23	3,887
Berkeley	19	3,398	Marion	33	7,140
Calhoun	36	4,491	Oconee	11	4,130
Charleston	84	17,228	Orangeburg	45	10,106
Clarendon	43	5,662	Pickens	12	2,016
Colleton	30	4,067	Richland	2	250
Dorchester	22	3,717	Sumter	32	5,159
Fairfield	28	3,857	Williamsburg	74	7,252
Florence	94	16,052	York	2	550
Georgetown	14	4,093			
Greenville	9	1,051	TOTALS	908	148,918

Probably no single educational move in the South has had a more far reaching effect upon conservation than has the Southern Forestry Education Project in South Carolina.



148,000 MEN, WOMEN AND CHILDREN SUCH AS ARE SHOWN BELOW SAW AND HEARD THE MESSAGE OF FOREST FIRE PREVENTION IN THE LOCALITIES SHOWN ON THE MAP ABOVE, WHERE EACH SPOT INDICATES A SHOW OR LECTURE—908 MEETINGS WERE HELD IN RURAL COMMUNITIES IN 28 COUNTIES—PHOTOGRAPHS ARE USED THROUGH THE COOPERATION OF THE AMERICAN FORESTRY ASSOCIATION.



RURAL SCHOOL ROOM AUDIENCE

<i>County</i>	<i>Name of School</i>	<i>Location</i>	<i>Number Pupils</i>
Lancaster	Heath Springs	Heath Springs	35
Laurens	Cross Hill	Cross Hill	16
Lexington	Lexington	Lexington	41
McCormick	Washington Con.	Parksville	21
Marion	Marion	Marion	40
Marlboro	Fletcher-Memorial	McColl	40
Newberry	Prosperity	Prosperity	10
Oconee	Cleveland	Cleveland	38
Orangeburg	Holly Hill	Holly Hill	30
Pickens	Dacusville	Dacusville	27
Richland	Blythewood	Blythewood	12
Saluda	Ridge Spring	Ridge Spring	12
Spartanburg	Duncan	Duncan	11
Sumter	Hillcrest	R.F.D. 3, Sumter	20
Union	Jonesville	Jonesville	18
Williamsburg	Kingstree	Kingstree	30
York	Rock Hill	Rock Hill	28

Under this project local property owners provide a ten acre tract of forest land for use by the school as a demonstration forest. The Forest Service surveys the tract and makes a 10% cruise of the timber thereon. A map of the area and a 10 year management plan based on the results of the cruise are delivered to the teacher and his pupils on the ground at the forest. Each pupil is supplied with a manual on Vocational Forestry containing 18 lessons dealing with the economic problems, Forestry and Agriculture, and each phase of timber production from the collection of the seed and the raising of the seedlings to the care of the woodlot and the measuring and marketing of forest products. Lessons are also included on conservative naval stores practice and preservative treatment of farm timbers. It is planned that the lessons be applied upon the demonstration forest as they are studied in the class-room.

To date demonstration forests have been established at 38 schools in the State and 1,178 boys are actively engaged in the study of Forestry. The remaining forests it is hoped will be established before January 1, 1932.

4-H Clubs:

A three year program of study and practice for 4-H Forestry clubs was drawn up during the year and presented to Dr. W. W. Long, head of the Extension Service, for approval before final

adoption. With its approval it is hoped to give the plan a tryout in two counties this winter before drawing it up in final form for state-wide use.

Fairs and Exhibits:

Exhibits on Forestry were made at 13 fairs during the fall of 1930 and plans are under way for exhibits at 16, including the State Fair, during the coming season. The schedule as already prepared for the Fair season of 1931 follows:

<i>Fair</i>	<i>Date</i>
Sumter (Sumter County Fair)	October 6- 9
Florence (Pee Dee Fair Association)	October 13-16
Rock Hill (York County Fair Association)	October 13-16
Loris (Loris Fair Association)	October 19-24
Gaffney (Cherokee County Fair)	October 20-24
Columbia (State Fair)	October 19-24
Camden (Kershaw County Fair)	October 26-31
Newberry (Newberry County Fair)	October 26-31
Lancaster (Lancaster County Fair)	October 26-31
Orangeburg (Orangeburg Co. Fair Assn.)	October 26-31
Spartanburg (Spartanburg Co. Fair Assn.)	October 27-31
Colored State Fair	October 26-31
Anderson (Anderson Fair)	November 3- 7
Walterboro (Colleton Co. Fair Assn.)	November 3- 6
Union (Union County Fair)	November 3- 7
Charleston (Chas. Agri. & Ind. Fair, Inc.)	November 9-14
Brunson (Hampton County Fair Assn.)	November 23-28

In addition to the exhibits at regular fairs, hundreds of window displays have been used in store windows about the State.

Special Meetings:

The State Forestry Commission and the Aiken County Forest Protective Association were represented at the annual parade of the State Firemen's Convention by a float, two trailers, a specially constructed forest fire fighting truck and a troop of Boy Scouts, each bearing a forest fire slogan on a banner.

In January with the co-operation of the U. S. Forest Service, U. S. Forest Service Lecturer H. N. Wheeler visited the State in a two weeks tour giving 13 lectures to 3,265 men, women and

children in schools and colleges and before various civic clubs and other organizations.

During the winter of 1930-31 a Commercial Forestry Congress was held in Columbia under the auspices of the Natural Resources Division of the United States Chamber of Commerce and in co-operation with the Chambers of Commerce of Sumter and Columbia and the South Carolina Extension Service.

In February 200 colored preachers, their deacons and their elders, attended a meeting in the Kershaw County courthouse called by L. I. Guion, president of the Kershaw County Forest Protective Association. Talks were made by the president of the association, the Mayor of Camden, the State Commander of the American Legion, a Director of the Association and by the State Forester.

Hundreds of talks have been made at civic club and other organization meetings by the State Forester and the members of the State Forest Service.

Publications:

The following publications were issued and distributed during the year:

"Do You Want Your Forest Land to Burn?" This leaflet was issued in co-operation with the Aiken County Forest Protective Association.

"Forest Tree Planting in South Carolina."

"Forest Conservation Programs."

"Lessons in Vocational Forestry" for Vocational Agricultural Schools.

"My Forestry Notebook" for use in public schools.

One thousand calendars bearing information on conservative turpentine production were distributed by the commission in the counties interested in Naval Stores production.

Thousands of placards bearing the law as to woods burning were distributed to property owners throughout the State.

APPLIED FORESTRY

The State Forest Tree Nursery:

The Commission's 51½ acre State Forest Tree Nursery located on Highway No. 1 just two miles south of Camden is in immediate charge of Nurseryman L. M. Staley. During the year a small dwelling was erected for his use and he now lives at the Nursery. An overhead sprinkling system was installed on approximately 11½ acres of the nursery, thus greatly lowering the costs of watering. A dam was constructed on the branch which serves as a source of water for the trees and the water thus provided was sufficient to carry through the extreme dry spell of the late summer with the exception of about two weeks. It is thought that a slight enlargement of the reservoir next summer will give an adequate supply for the normal year. The capacity of the gasoline pump now in use is only about one-half that needed for our present overhead system and less than one-quarter of that needed for the system when completed. The gasoline engine purchased second hand originally has given considerable trouble and should be replaced next summer by a new unit, electrical, if current is extended to the nursery.

Forest Tree Planting:

In 1931, 1,042,032 forest tree seedlings were distributed at cost to landowners interested in reforesting their lands. A detailed examination of these plantations was made in September and a summarized statement follows:

Total Seedlings Distributed	1,042,032
Total Seedlings Planted	1,039,532
Total Seedlings Planted from Sources Other than State Nursery	173,600
Total Seedlings Reported Upon	1,203,519

Forest Tree Seedlings distributed:

Longleaf Pine	207,055
Slash Pine	383,355
Loblolly	258,810
Shortleaf	183,005
Black Locust	9,807

1,042,032

Survival of Seedlings by Species:

Longleaf Pine	66.3%
Slash Pine	62.1%
Loblolly Pine	63.1%
Shortleaf Pine	62.1%
Black Locust	84.5%

Reports on individual species show a higher survival for Longleaf Pine than for any other of the Pines. This is unusual and is due to the fact that practically all plantations of Longleaf showed fair results while with the other species there were a few in each case that showed almost a complete loss due to poor planting which brought the averages down for those species. The percentage of survival on the individual plantations went as high as 80% for Longleaf, 87% for Slash, 92% for Loblolly, 69% for Shortleaf, and 95% for Black Locust.

These percentages are considered fair in view of the lack of supervision provided and in view of the extremely dry conditions that prevailed. Other factors that contributed to losses were; indifferent planting methods, lack of care of seedlings on delivery from the Nursery, frost heaving, erosion, grass competition, and rodents.

All losses were counted when considering the survival percentages listed above. For example, seedlings dug up by road construction gangs in securing dirt for highway construction, were counted as failures.

Where seedlings were properly cared for on arrival and where the trees were carefully planted the losses were low, in spite of the draught.

The September inventory of the Nursery includes the following trees with a total of a million and three-quarter seedlings available for farmers and other landowners for planting this spring. This number may be materially reduced during the months between the date of this report and the planting season. It is reasonable to expect, however, that the distribution of these seedlings will result in the reforestation of more than 1,000 acres of land.

The Commission has continued its policy of distributing forest tree seedlings at cost to landowners in South Carolina. This



HILLCREST. PLANTING LONGLEAF PINE SEEDLINGS JAN. 1931
 BY W. R. MATTOON, U. S. FOREST SERVICE



Courtesy U. S. Forest Service:

RESULT OF FIRE PROTECTION AND HOG PROTECTION SUMMERVILLE.
 PHOTO BY W. R. MATTOON, U. S. FOREST SERVICE

cost amounts to three dollars per thousand F.O.B. Camden, plus a small charge for packing and transportation.

Forest tree plantations are made for several distinct purposes: Commercial Timber Production, Naval Stores Production, Wind-breaks, Experimental and Demonstrational Value, and the Prevention of Erosion.

The bulk of the forest tree seedlings distributed by the State Forestry Commission are planted for commercial timber production and for the production of naval stores. Longleaf and Slash pine are in greatest demand in the naval stores regions or the low country, with Loblolly and Shortleaf in the Piedmont. For straight timber production a spacing of 6x6, or 1,000 to the acre has been used, but where naval stores production has been the sole aim a spacing of from 6x8 to 10x10 has been resorted to, thus allowing for the greater crown area necessary for the maximum production of gum.

Experimental and demonstrational areas are those located with a primary view to their educational value and with reference to results obtained under different conditions of planting and spacing. Plans call for the establishment of at least one acre of demonstration planting along the well-traveled highways of the State during the next season.

Plantations for the prevention of erosion find their greatest numbers in the Piedmont section of South Carolina. In the hilly sections of this region economic conditions and erosion are rapidly forcing large areas of formerly good agricultural land into the submarginal classes. Authorities have estimated that the cultivation of such steep areas has caused 60 per cent of the Piedmont regions of the United States to lose from four to eighteen inches of topsoil. In one county in South Carolina it has been estimated that due to erosion 90,000 acres are no longer fit for agricultural use. Such areas are today lying idle subject to the eroding effects of wind and water. Even footpaths turn into small gullies and gullies turn into ditches. Such land is worthless as long as it is permitted to lie idle. By use of brush dams and the planting of Locust and Pines the eroding effect is retarded and the roots of the trees, as they become established, serve to bind the soil particles together. Thus not only is erosion stopped, but the land is once more returned to producing a cash crop for the owner.

Tree planting has a direct value in forest protection that is not generally recognized. Few people appreciate the rapidity of growth of our native pines under complete fire protection. When a farmer or landowner can be induced to plant a few acres to pines he immediately takes an interest in them. That interest grows with the trees and the protection afforded those planted seedlings eventually spreads to his surrounding woodlands. This phase of the value of tree planting is entirely secondary to the unquestioned value obtained as the result of making the land once more productive and the timber crop obtained.

It has been estimated that over 1,300,000 acres of land in South Carolina should be planted to forest tree seedlings. At the present rate of planting, approximately one million seedlings a year, it will require 1,300 years to plant up this area. This, of course, is not entirely true, since a portion of that area will in time seed up with inferior species and with some good trees, but the fact remains that an expansion of the tree planting program will materially assist in decreasing the idle land areas in the State and start that land to producing an income to the property owner at an earlier date.

At the request of property owners about fifty forest properties were examined by District Foresters and formally reported upon. This does not include the numerous cases where superficial examinations were made and reports to property owners given verbally.

ACCOMPLISHMENTS OF THE STATE COMMISSION OF FORESTRY

1. Distribution of 1,000,000 forest tree seedlings in 1931 and the raising of a million and a half seedlings for distribution in 1932 to landowners at cost for reforestation purposes.

2. Maintained four District Foresters available to landowners for advice and assistance in the protection of their properties, the management of their woodlands, and the reforestation of idle acres.

3. Financial co-operation and direct assistance in the protection of over one-half million acres of forest land in eight protective units located in 12 counties.

4. Laid the groundwork for the establishment of three new protective associations for the winter of 1932 and for extension on two others.

5. Carried the message of conservation by means of movies and lectures in one project to 148,000 men, women and children in 908 meetings in 28 counties.

6. Placed the study of Forestry in 45 vocational agricultural high schools with practical work in Forestry being carried on on Demonstration School Forests under a ten-year management plan laid down by the District Forester.

7. Secured the adoption by the S. C. Federation of Women's Clubs of a conservation program including teaching of Forestry in the schools, an essay contest by each club and special conservation meetings.

8. Participated in many special conservation meetings; arranged special itinerary for U. S. Forest Service lecturer and entered a float and fire fighting equipment in the parade of State Firemen at the annual convention in Aiken.

9. Put on exhibits at 13 county and state fairs in 1930 and arranged for exhibits at 16 fairs in 1931.

10. Printed and distributed numerous publications educational in nature, including manuals for use by vocational agricultural high schools and by public school teachers and news items for the press.

RECOMMENDATIONS FOR THE FUTURE

1. Continuation of present protection policies, with expansion as consistent with economic conditions and with a view to county and statewide protection at some future date.
2. Continuation of Forest Tree Nursery and tree planting programs to the end that our estimated million and a quarter idle acres be once more restored to productivity.
3. Expansion of the program placing Forestry in the Vocational Agricultural Schools.
4. Continuation of and intensifying of educational efforts in every direction.
5. Study of the idle land problem as presented by the eroded areas in the Piedmont counties.
6. Establishing experimental areas in each county in the State in planting, damage by burning, thinnings, naval stores production, utilization, etc., in co-operation with the U. S. Forest Service and the Agricultural Extension Service.
7. Study of the possibilities for small manufacturing plants in conjunction with existing saw mills to utilize waste material and material now being thus manufactured in other states.
8. Study of the forest land taxation systems in other states and the situation in South Carolina with recommendations for a suitable forest tax system for our state.
9. Establishment of State Parks for the recreation of the general public in the coastal plain, sand belt and Piedmont sections, when areas are made available through gift.
10. Building up of a buying and marketing service for woodland owners and the buyers of forest products in co-operation with existing agencies.

THE LAND PROBLEM AND FORESTRY IN SOUTH CAROLINA

There is herewith made a part of this report a general summary of the land situation in each county of the State. It deals with submarginal agricultural lands or with lands not at present in cultivation. It is made from the standpoint of Forestry, but this does not necessarily mean that Forestry or tree planting is the highest use to which that land might be put. This report indicates that over 1,000,000 acres of land are in need of planting. That means that there are 1,000,000 acres at the present time not being cultivated and which by reason of lack of seed trees or distance from seed trees will not reseed naturally. However, circumstances might be such as to place the highest use of that land in pasture, in orchards, in game management or a combination of Forests and any one or more of those uses. The final use of that land will of course be determined by the owner in so far as economic conditions permit, but a land survey with special reference to idle lands could be conducted jointly by the Agricultural Extension Service and the State Forest Service with value to all concerned.

The figures and a large part of the information with them are not submitted as being absolutely accurate. They represent the best estimate the District Foresters could make following a rather limited study of their districts, conferences with county agents, vocational school teachers and other extension workers, and perusal of census and other statistical reports. In fact, the data as given here, both as to acreages and forest types, are given just as the start in what is felt is an important part of the groundwork in Forestry in this State. It is hoped that as the District Foresters become more familiar with their districts and as more time is made available for the study more accurate information may be obtained and the report revised from time to time.

Abbeville County

Total land area of county, 326,400 acres; area of woodland on farms, 56,428 acres; area of woodland outside of farms, 111,885 acres; total woodland area, 168,313 acres. Shortleaf and Loblolly Pines with mixed hardwoods. Total eroded land, 25,776 acres. Thirty thousand acres should be planted. Recommend Loblolly and Shortleaf Pine and Black Locust. During January, 1931 one plantation of 1,000 Loblolly Pines was made near Calhoun Falls, for demonstration purposes. One hundred-fifty fires annually burn over about 6,000 acres. The woodlands are largely in second-growth Pine. Pine stands are growing at the rate of one cord per acre per year. A considerable number of Oak ties are cut in the county annually. There are no large contiguous tracts of forest land in the county and therefore a county-wide system with three fire towers is needed to handle the local fire situation.

Aiken County

Total land area, 704,000 acres; total forest area on farms, 168,281 acres; woodland outside farms, 357,521 acres; total forest area, 526,042 acres. Longleaf and Loblolly Pines predominate in the hills, with Gum, Maple, Poplar, Cucumber, Ash and Hickory in the swamps. Ten thousand acres are in varying stages of erosion and 125 fires annually burn 30,000 acres of land. Aiken County has a co-operative forest fire protective association, with landowners eligible for membership on payment of two cents per acre per year. Fifty thousand acres are in need of planting and Slash, Longleaf and Loblolly Pines with Oak, Ash, and Poplar are recommended for reforestation. Much interest is manifested in the protective association and as a result less trouble is probably experienced in this county than in any other heavily forested county in the State.

Allendale County

Total land area, 278,400 acres; of which 26,521 acres are on farm woodlands and 158,626 acres in woodland outside of farms, making a total woodland area of 185,147 acres. This includes Longleaf, Slash, Loblolly, Shortleaf and Pond Pines, together with the swamp hardwood type which includes Gum, Oak, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress. It is estimated that there are about 10,000 acres in the county that should be planted to either Slash, Longleaf or Loblolly Pines. Twenty-five thousand acres are burned over annually by 200 fires.

Anderson County

Total land area of county, 485,120 acres; area of woodland on farms, 81,261 acres; area of woodland outside of farms, 114,750 acres; total woodland area, 196,011 acres. Pine and mixed hardwood stands. Shortleaf Pine (*P. echinata*) is the predominating Pine and is found in more or less pure stands aggregating about 50% of the forest type. The hardwoods run more or less in mixture with the Pine except along streams and bottomlands where the type is largely hardwoods, including Red and

White Oaks, White Hickory, Red Gum, Yellow Poplar and minor species of little commercial value. There is a sprinkling of such commercial species as Black Locust, Red Cedar, Dogwood and Persimmon. Total eroded land, 40,595 acres. Forty to fifty thousand acres should be planted. Recommend Shortleaf and Loblolly Pine, Black Walnut, Yellow Poplar, Red and White Oak. About 2% of this acreage should be planted in Black Locust for fence posts, insulator pins, etc., and the protection and improvement of soil. One hundred seventy-five fires annually burn over about 6,000 acres. Practically all the woodlands in this county have been cut over at least once and there is very little virgin timber left. This is one of the counties in the Piedmont region which has cut a great deal of hardwood, especially Yellow Poplar, Red and White Oak and Black Walnut. A large percentage of the woodlands at present are in a scraggly condition, due to careless cutting. Second growth Pine stands are growing at the rate of one cord per acre per annum. During the 1930-31 planting season there were four forest tree plantations made in the county. The following species and number of trees were planted: 6,000 Shortleaf Pine, 18,500 Loblolly Pine, 2,000 Slash Pine, 3,000 Black Locust. There are no large contiguous tracts of forest land in the county. Therefore a countywide protective system with three fire towers seems the only logical way of handling the fire situation.

Bamberg County

Total land area of 240,00 acres, of which 20,283 acres are farm woodland and 95,058 acres woodland outside of farms, making a total woodland of 125,342 acres. The principal types are the Yellow Pine, including the Longleaf, Slash, Shortleaf, and Loblolly and the swamp hardwoods, which include Oak, Gum, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress. It is estimated that there are about 6,000 acres of land that should be planted to the species of the Yellow Pine type. About 200 woods fires annually burn over approximately 20,000 acres. At present there is one planting established in Bamberg County and this is on the property of S. C. M. Guess of Denmark, who is setting out this year 2,000 trees.

Barnwell County

Total land area of 240,000 acres, of which 20,283 acres are farm woodland, 159,676 acres are in woodland outside of the farms, making a total woodland area of 185,811. Here again we find the Yellow Pine and swamp hardwood types containing the following species: Longleaf, Slash, Loblolly, Shortleaf and Pond Pines; Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress. It is estimated that there are about 10,000 acres in Barnwell County that should be planted to the Yellow Pines. There were about 150 fires last year which burned over 15,000 acres.

Beaufort County

Total land area of 449,280 acres, of which 59,065 acres is on farm woodlands and 268,045 is on woodlands outside of farms, making a total woodland area of 327,110 acres. The Yellow Pine species, which consist of Longleaf, Slash, Loblolly, Shortleaf and Pond Pines and the swamp hardwoods, consisting of Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress, again predominate. Thirty-five hundred acres should be planted to the Slash and Longleaf Pine. Approximately 125 fires last year burned over about 10,000 acres. A large portion of Beaufort County is owned and maintained by hunting clubs and other individuals as winter homes. These people have been trying their best to keep fires from their property, but as yet have effected no organization. Burning is practiced on many of these estates in an endeavor to provide bird feed patches and to keep down the thick undergrowth. Mr. S. G. Jackson of Burton is planting 2,000 Slash and Longleaf Pines this year and intends to plant another two acres next year. The Paris Island Marine Base is interested in reforesting about 500 acres, but do not have sufficient funds at present. They are, however, doing their best to protect their 11,000 acres from fire.

Berkeley County

Total land area of 768,000 acres, of which 74,539 acres are in farm woodland and 574,877 acres are in woodlands outside of farms, making a total woodland area of 649,216. Of this area, the predominating types are the Yellow Pine types, which consist of Longleaf, Slash, Loblolly, Shortleaf, and Pond Pines and the swamp hardwoods, consisting of Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly, and Cypress. It is estimated that there are about 5,000 acres in Berkeley County that should be planted to Longleaf and Slash Pines. Some of the best Pine timber in South Carolina is found in Berkeley County. A large part of this land is in the hands of private owners and hunting clubs, some of whom have been trying to keep fires down. It is estimated that there are more than 1,000 fires occurring in Berkeley County annually, burning over some 200,000 acres. At present there is no county-wide organized effort to stop forest fires but there is a fire tower erected on the Cooper River Timber Company's property near Chicora, S. C. Mr. Frederick Dallet of Oakley owns 6,000 acres and at present this land is in the hands of the James D. Lacey Company of Charleston which is doing selective logging work and putting the property on a sustained yield basis.

Calhoun County

Total land area of 250,240 acres, of which 34,338 is on farm woodland and 134,609 is on woodland outside of farms, making a total woodland area of 168,947 acres. The woodland growth consists of the Yellow Pine type which is Longleaf, Slash, Loblolly, Shortleaf, and Pond Pines and the hardwood types of Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress. It is estimated that there are about 8,000 acres of land that should be planted to Longleaf, Loblolly and

Shortleaf Pines. Slash Pine should be planted to the lower lands and river bottoms. About 100 fires burn over 5,000 acres annually.

Charleston County

Total land area of 592,640 acres, of which 103,644 are farm woodlands and 355,484 are on woodlands outside of the farms, making a total woodland area of 459,128 acres. The principal types are the Yellow Pines, which consist of the Longleaf, Slash, Loblolly, Shortleaf, and Pond Pines and the hardwood types, consisting of Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress. It is estimated that there are approximately 3,000 acres that should be planted to Longleaf, Slash, and Loblolly Pines. It is estimated that 250 fires burn over 10,000 acres annually. A large portion of the land is owned by hunting clubs and private individuals for game preserves. The Boy Scouts of Charleston are planting 1,000 pine seedlings this year on their camp site and eventually intend to plant up the 300 adjoining acres. The Cooper River Timber Company of Charleston have listed their lands for protection with the state and are having splendid success.

Cherokee County

Total land area of county, 238,720 acres; area of woodland on farms, 59,897 acres; area of woodland outside of farms, 55,650 acres; total woodland area, 115,547 acres. The main forest type is mainly Shortleaf Pine (*P. echinata*) running largely to pure stands aggregating 50 to 75 per cent of the forest area in the county. This latter statement is based on the forest type at present and not what it was 25 to 50 years ago. There is some evidence of mixtures of Pine and hardwoods, the latter being largely Red and White Oak. Total eroded land, 15,207 acres. It is estimated 18,000 acres should be planted. Recommend Shortleaf and Loblolly Pine, Black Locust and Red and White Oak. During the last planting season two forest tree plantations were made in the county. One thousand Loblolly Pine, 500 Shortleaf Pine and 500 Black Locust were planted.

Chester County

Total land area of county, 378,880 acres; area of woodland on farms, 53,542 acres; area of woodland outside of farms, 162,401 acres; total woodland area, 215,943 acres. Forest types practically same as for Cherokee. Total eroded land, 27,803 acres. Between 25,000 and 30,000 acres of land should be planted. Recommend Shortleaf and Loblolly Pine and Black Locust.

Chesterfield County

Total land area, 535,680 acres; area of woodland on farms, 110,665 acres; area of woodland outside farms, 265,074 acres; total woodland area, 375,739 acres. Blackjack Oak has taken over large areas of cut over land after fires have been allowed to kill out Longleaf Pine reproduction. As yet the Pine lands of the county generally have a scattering

of Longleaf seed trees sufficient to restock valuable timber in the absence of fires. This suggests the Longleaf-Blackjack Oak type common to this sandhill section. Oak, Ash, Hickory, Walnut, Gum, Maple, Poplar and Cucumber abound in the rich lowlands adjacent to the Peedee River. Probably only 30,000 acres in all will be found out of range of seed trees. For planting these areas Longleaf, Loblolly, Shortleaf and Slash Pine are recommended. Ash, Poplar, Locust and Walnut if planted in the richer lowlands will prove a profitable undertaking. Preliminary investigations disclose possibilities for organizing a forest protective unit among landowners of the county. It is hoped that a county-wide organization might be the result of continuing efforts toward a protective unit in the vicinity of McBee. Five hundred fires annually burn 150,000 acres of forest land.

Clarendon County

Total land area of 391,040 acres; area of farm woodlands, 42,554 acres; area of woodlands outside farms, 215,784 acres; total woodland area, 258,338 acres; percentage of total woodland on farms, 16%. Here are found the forest types typical of the coastal plain. Swamp forests of Gum, Oak, Cedar, Cypress, Poplar, Cucumber, Maple are found along the Santee River in the south and along the banks of the Black River which flows from west to east through the county. Mixed stands of Loblolly Pine occur on the dry sandy soils. More than 1,000 people are employed in the forest industries of the county and about \$500,000 is invested in the lumber business. About 32,000 acres of land should be planted with tree seedlings. Fire control will bring about reforestation upon the majority of land now void of future forest wealth. Longleaf, Loblolly and Slash Pine is recommended for planting upon the dry sandy soils of the county. Ash, Oak, Poplar and Walnut will do well if planted upon the moist, rich soils now only partially productive. Approximately 500 fires annually burn 140,000 acres. The Champion Fiber Company, whose tract is near Foreston, is co-operating with the State Forest Service in protecting their lands from fires.

Colleton County

Total area of 720,640 acres, of which 170,888 acres is in farm woodland and 391,795 acres in woodlands outside of the farms, making a total woodland area of 562,683. The principal types are the Yellow Pine species which consists of Longleaf, Slash, Loblolly, Shortleaf and Pond Pines, together with the swamp hardwood type which includes Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly and Cypress. It is estimated that about 2,500 acres should be planted to Longleaf, Slash, and Loblolly Pines. The entire county is very much broken into swamps and bays. There are some exceedingly fine stands of Slash and Longleaf Pines which at present are being worked for turpentine. Almost all of the saw timber has been taken out or is being cut. There are, on most of the areas cut over, enough seed trees remaining to sufficiently restock the cutover land. It is almost entirely a matter of protection.

It is estimated that about 600 fires burn over 150,000 acres annually. At present there are no forest fire organizations, although some of the large landowners in the southern part of the county are doing their best to keep out fires for game development. However, a 2-acre demonstration plot is being established this year on the property of T. J. McDaniel on the St. George road.

Darlington County

Total land area, 387,200 acres; area of woodland on farms, 89,536 acres; area of woodlands outside farms, 159,548 acres; total area in woodlands, 249,084 acres; percentage of total woodland in farms, 36%. A large portion of the timberland of Darlington County is included in the swamps which adjoin the Great Peedee River which forms its eastern boundary and those along the course of Big Black creek which flows through the county. Along these water courses occur the swamp forest types including Ash, Oak, Maple, Gum, Cedar, Cypress, Magnolia, Poplar, Cucumber, and Pond Pine. The higher portions of the county support the mixed Pine and mixed hardwood types. There are many areas on the farms which must be planted to insure reforestation since extensive agriculture has not allowed the persistence of seed trees. It is estimated that at least 24,000 acres should be planted including areas which will not be reseeded by nature. All the commercially important southern pines are recommended for planting on the well-drained areas. Ash and Poplar are proposed for restocking denuded lowlands. Hartsville is the location of offices and pulp mill of the Carolina Fiber Company, which is active in protecting its property from woods fires and in planting forest tree seedlings. This company's paper and pulp mill is the only plant of its kind in the entire state. At present they are making paper from black gum which is secured from the forests of South Carolina. Approximately 300 fires annually burn over 80,000 acres in the woodland outside of the swamp areas. There is yet no countywide protective organization to safeguard the forest asset.

Dillon County

Total land area, 301,440 acres; woodland on farms, 36,674 acres; woodlands outside of farms, 133,403 acres; total area of woodland, 170,077 acres; percentage of total woodland on farms, 21%. Two rivers, the Little Peedee River and Buck Swamp River, traverse the county from north to south. Along these water courses we find swamp timberland of the mixed hardwood type including the Swamp Oaks, Gums, Magnolias, Maple and Ash. These swamp areas are also characterized by stands of Cypress and Tupelo Gum. In the drier lands there occur the hardwood-cedar type of Oaks, Hollies, Dogwood, Mulberry, Redbud, and Cedar. The Pine or dry sandy lands support a growth of mixed pines. Dillon County is an agricultural county, producing large crops of tobacco and cotton. A little less than half of the area has been cleared for agriculture. It is estimated that at least 47,000 acres should be planted with trees. Longleaf, Loblolly, Shortleaf, Slash Pines are recommended for

planting on the dry sandy lands, while Ash and Poplar should be planted on the overflow lands along the two rivers of the county. There is a great need for timber to support the agriculture of the county, particularly in curing the tobacco crop. There are approximately 130 woods fires in the county annually, burning over about 40,000 acres of woodland.

Dorchester County

Total land area of 392,320 acres, of which 74,394 are on farm woodlands and 237,140 acres on woodlands outside of farms, making a total woodland area of 311,534 acres. The principal types are the Yellow Pine which includes Longleaf, Slash, Shortleaf, Loblolly and Pond Pine and the swamp hardwoods which include Oak, Gum, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly, and Cypress. It is estimated that there are about 3,000 acres that should be planted to Longleaf, Slash and Loblolly Pines. Dorchester County is considerably broken up by river swamps and bays. It is estimated that about 300 fires burn over 15,000 acres annually. The Cooper River Timber Company is protecting their property in Dorchester County and have a fire tower on the Ashley River road located just a mile and a half from Middleton Gardens. The towerman is on duty the year round and last year less than one per cent of their land under observation from this tower was subjected to fire.

Edgefield County

Total land area, 335,360 acres; woodland on farms, 91,545 acres; outside farms, 144,024 acres; total area woodland, 235,569. Shortleaf and Loblolly predominate among the Pines, with the usual hardwoods in the river bottoms. Fifteen thousand acres are badly eroded and 30,000 acres are in need of reforestation. Ninety fires annually burn over 22,000 acres. Woodland generally is in small tracts and county protection is probably the solution to the fire problem. Loblolly, Shortleaf and Slash Pines and Oak, Ash, Poplar and Black Locust are recommended for planting.

Fairfield County

Total land area, 451,840 acres; woodland on farms, 109,812 acres; woodland outside farms, 244,522 acres, total forest area, 354,334 acres. Ninety thousand acres are so badly eroded as to be materially reduced in value from the agricultural standpoint. A large percentage of such areas will find its highest use in Forestry. Thirty-five thousand acres might well be planted to forest trees. Loblolly and Shortleaf Pines will do well here, with Ash and Poplars in the bottoms and Black Locust on the badly eroded areas. Large scale planting must be resorted to along with special reclamation work in erosion prevention if vast acreages are to be retained as productive lands.

Florence County

Total land area, 483,840 acres; area of woodland on farms, 104,092 acres; area of woodland outside of farms, 193,639 acres; total area of woodlands 297,931; percentage of total woodland on farms, 35%. Thirty

thousand acres of idle land should be planted. All the commercially important southern Pines, Ash, Locust, and Poplar are recommended for planting. One planting project has been commenced by the Carolina Fiber Company on their holdings near Mars Bluff. This company is also protecting their Florence County property from woods fires. There still remain several large tracts of virgin timber in the swamps along the Peedee River and Lynches River. The species included in these low areas are Oak, Gum, Cypress, Cedar, Magnolia, Ash, Poplar and Blue Beech. The higher land of the county supports a forest growth of the mixed Pine type, the Pine hardwood type, and many places there are areas of pure Longleaf Pine. Three hundred fires burn over about 90,000 acres annually.

Georgetown County

Total area, 529,920 acres; area of farm woodlands, 91,898 acres; area of woodlands outside of farms, 341,838 acres; total area of woodlands, 433,827 acres. The tree species may be divided roughly into four distinct types: the mixed Pines, including Longleaf, Shortleaf, Loblolly; the Pine-hardwood, including Longleaf, Shortleaf, Loblolly, Turkey and Blackjack Oak; the Swamp hardwood and Pond Pine, including Oaks, Poplars, Gums, Maple, Magnolia, Ash and Pond Pine; the Gum-Cypress, including the Tupelo Gum and the Cypress. About 19,000 acres in idle or unprofitable farm land must be planted for future timber. By far the greatest need of the county is protection from fire. About 600 fires annually burn over approximately 150,000 acres of woodland. The Cooper River Timber Company is at present the only agency co-operating under agreement with the State Forest Service in a program for fire protection in this county. There are many large landowners of the county who desire protection and a large number are taking steps as individuals to safeguard their lands. Jesse Metcalf, owning about 13,000 acres, hires two and sometimes three patrolmen during the fire season. The Huntington estate has been divided into blocks by 45 foot fire lines. This estate comprises about 7,000 acres. Considerable interest has been manifested by large property owners in the matter of organizing a protective unit, particularly those on that division of the county known as the Waccamaw Neck. Slash, Longleaf, Loblolly, Poplar and Ash are recommended for planting in the county.

Greenville County

Total land area, 487,040 acres; area of woodland on farms, 112,484 acres; area of woodland outside of farms, 160,775 acres; total woodland area, 273,259 acres. Woodlands are composed of pine and mixed hardwoods. Shortleaf Pine (*P. echinata*) is the predominating Pine species and runs more or less to pure stands aggregating about 50% of the forest type. Hardwoods occur more or less in mixture with Pine except along streams and bottomlands where practically pure hardwood stands are found. The principal hardwoods are: White and Red Oaks, White Hickory, Red Gum, Yellow Poplar and minor species of little commercial

value. Scattered trees of Black Locust, Red Cedar, Dogwood and Persimmon are also found. Total eroded land, 24,199 acres. Twenty-five to forty thousand acres should be planted. Recommend planting Shortleaf and Loblolly Pine, Black Walnut, Yellow Poplar and White and Red Oak. Possibly 25% of this acreage should be planted in Black Locust. During the last planting season four plantations were made in the county and the following species planted: 5,000 Loblolly Pine, 1,000 Slash Pine, 1,000 Longleaf Pine. Two hundred twenty-five fires annually burn over 15,000 acres. The northern portion of this county is classed as semi-mountainous land. It is primarily forest land of extremely high value for watershed protection and of secondary importance for the production of timber and recreational uses. There are about 35,000 acres of virgin mixed hardwoods and pine land in the northern part of the county owned by the Saluda Land and Lumber Company. This is the only large block of virgin timber in the county and practically all there is. The majority of the wooded area has been cut over at least once and is reverting to a type composed largely of scrub pine (*P. virginiana*) and mixed hardwoods. Large contiguous tracts of forest land in the northern part of the county make possible the establishment of a private protective association to handle the local fire situation. It is expected that such an association, comprising 40,000 to 45,000 acres, will be organized in December 1931. It will be possible to build this area up to one of around 65,000 acres in this county alone. Protection in the southern part of the county must necessarily be on a countywide basis, since there are no large adjacent blocks of land. Greenville is one of the leading agricultural and textile manufacturing counties in the state. There are several small wood-using industries located in and around Greenville which manufacture bobbins, spindles and handles for the textile mills. Their raw material, however, does not come from within the county. The Greenville County Fish, Forest and Game Association has succeeded in establishing a fish hatchery on the Middle Saluda River and hopes to establish a game refuge.

Greenwood County

Total land area, 302,720 acres; woodland on farms, 103,969 acres; woodland outside farms, 77,421 acres; total area woodland, 181,390 acres. Thirty thousand acres are in varying stages of erosion and 30,000 acres in need of planting. Shortleaf and Loblolly Pines predominate with mixed hardwoods. Sixty fires annually burn over 12,000 acres. Forest areas being small and scattered the final solution to the fire problem probably lies in a county-wide protective system. Shortleaf and Loblolly are recommended for planting among the Pines and Black Locusts for fence posts and reclaiming eroded lands.

Hampton County

Total land area of 328,320 acres, of which 89,785 acres are in farming woodlands and 142,165 acres in woodlands outside of farms, making 231,950 acres of woodland. The principal types being the Yellow Pine

which includes the Longleaf, Slash, Shortleaf, Loblolly, and Pond Pine and the swamp hardwoods which include Gums, Oaks, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly, and Cypress. It is estimated that there are about 6,000 acres in Hampton County to be planted to Slash, Longleaf and Loblolly Pines. Hampton County is well broken up with streams, swamps, and bays. It is estimated that 250 fires burn over 10,000 acres each year. Some interest has been expressed by large property owners in co-operative protection and there is a good possibility for the establishment of a protective unit within the county.

Horry County

Total area, 741,120 acres; area of farm woodlands, 87,461 acres; area of woodlands not on farms, 405,899 acres; total woodland area, 493,360 acres; percentage of woodland in farms, 18%. Horry County is next to the largest county of the state. It also has next to the greatest amount of its timberland outside of farm woodlands. This evidences the great expanses of timberland characteristic of the county. Much of the timberland is included in the swamp lands adjacent to Waccamaw, Lake Swamp, and Peedee Rivers. These swamp lands support two distinct forest types; the swamp hardwoods including the Ashes, Gums, Oaks, Poplars, Maples and Magnolia; the Gum-Cypress type including the Tupelo Gum and the Cypress. The large expanses of sand lands are characterized by the mixed pines. Along the coast there is found a mixed hardwood type including the Liveoak, Hollies, Hickory, Turkey and Blackjack Oaks. About 25,000 acres of the county should be planted in forest trees. There is no doubt that Slash Pine, Longleaf, Loblolly, Shortleaf, Ash, and Poplar can be grown successfully in plantations. About 180,000 acres of woodland are burned over annually by approximately 660 fires. At present the Myrtle Beach Estates is the only agency which is co-operating under agreement with the State Forest Service in the matter of systematic forest fire control. Inquiries have shown evidence of interest in other organized fire protection units in the county. There is no regular fire tower in the county. The cupola on the top of Forest Inn which rises about 150 feet into the air is used as a lookout in protecting the lands of the Myrtle Beach Estates.

Jasper County

Total area of 381,400, of which 35,647 acres are in farm woodlands and 292,926 acres are in woodlands outside of farms, making a total woodland area of 328,572 acres. The principal types being the Yellow Pine which includes the Longleaf, Slash, Loblolly, Shortleaf, and Pond Pine and the Swamp hardwood type which includes Gum, Oak, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly, and Cypress. It is estimated that there are about 3,500 acres that should be planted to Slash, Longleaf and Loblolly pines. It is estimated that some 350 fires annually burn over 35,000 acres of timberland in Jasper County. A large percentage of the forest lands are held by hunting clubs and private individuals for recreational purposes. They have been carrying out their own methods

of fire protection but as yet have not been organized. There is a thriving turpentine industry being carried on at present, the returns amounting to about \$10,000.00 annually. The property of H. L. Pratt at the present time is in the hands of E. C. M. Richards, a forest engineer of Media, Pennsylvania, who is endeavoring to place 20,000 acres on a sustained yield basis. This year 60,000 Slash Pines and 40,000 Loblolly Pines were planted on this property.

Kershaw County

Total land area, 430,720 acres; area of farm woodlands, 83,709 acres; area of woodlands outside farms, 166,592 acres; total area of woodlands, 250,301 acres; percentage of total woodlands on farms, 33%. The mixed Pine type of Shortleaf and Loblolly and the Scrub Pine type are characteristic of the red clay soils of the north. The Pine hardwood type including the Longleaf Pine and the Blackjack Oak is found in the region of the sandhills. While over the level section the mixed Pines abound as far as the swamp areas along the Wateree River where grow the swamp or lowland trees such as Gum, Poplar, Oak, Cypress, Cedar, Maple, Mulberry, Hickory and Holly. A county forest protective association has been organized. A technically trained forester carries out the plans of the association. A 100-foot steel fire observation tower has been erected near Camden. Approximately 200 fires burn over 60,000 acres annually on the unprotected areas. Many individual landowners have initiated tree planting programs during the current year. It is estimated that at least 22,000 acres should be planted with seedlings. All the commercially important southern Pines will thrive. Ash, Poplar, Locust and Walnut should be planted on the better and well watered sites. The State Forest Service's tree nursery is located near Camden.

Lancaster County

Total land area, 329,600 acres; area of woodland on farms, 62,493 acres; area of woodland outside farms, 125,953 acres; total area of woodlands, 188,446 acres; percentage of total woodland on farms, 33%. Here the Longleaf Pine occurs in less abundance than in the coast counties. The Scrub Pine type is common. Shortleaf and Loblolly occur in mixture. The hardwood type including the Black Oaks, Hickory, Mulberry, Ash, Gum and Dogwood occurs on the better soils. The topography of the land allows erosion upon unprotected areas. About 57% of the county is classed as woodland. A comparatively large amount of land must be planted in trees. In fact there is a greater need for artificial reforestation in Lancaster County than in any other of the Peedee district. It is estimated that at least 48,000 acres should be planted with Loblolly and Shortleaf Pine, Locust, Ash, Walnut and Poplar. There is little industry in this county dependent upon forest products, its raw materials having been expended. About 150 woods fires burn over about 40,000 acres annually.

Laurens County

Total land area of county, 441,600 acres; area of woodland on farms, 76,549 acres; area of woodland outside of farms, 164,203 acres; total woodland area, 240,752 acres. Forest is largely Pine and mixed hardwoods. Shortleaf Pine (*P. echinata*) is the predominating Pine species and runs more or less to pure stands aggregating about 50% of the type. The hardwoods run more or less in mixture with the Pine except along streams and bottomlands where the pure hardwood type occurs. The principle hardwoods are White and Red Oaks, White Hickory, Red Gum, Yellow Poplar and minor species of less commercial value. Aside from these forest types there are minor sprinklings of such commercial species as Black Locust, Red Cedar and Dogwood. There is a considerable amount of Loblolly Pine (*P. taeda*) coming in with the Shortleaf especially in the lower part of the county. Total eroded land, 35,991 acres. Estimate 125,000 to 150,000 acres should be planted. Recommend Loblolly and Shortleaf Pine, Red and White Oak, some Black Locust, with the possibility of planting Longleaf Pine in the lower parts of the county when more is known as to the suitability of this location. During the last planting season two plantations of forest tree seedlings were made in the county: 78,000 Loblolly Pine; 174,000 Shortleaf Pine and 1,000 Slash Pine. This made a total of 253 acres planted with stock from the State Nursery at Camden. Of this total 251 acres were planted on the lands of Mr. Ross Cunningham at Waterloo. In addition to the seedlings secured from the South Carolina State Nursery, Mr. Cunningham also purchased and planted about 150,000 Shortleaf Pine seedlings from Louisiana. This is by far the largest planting project in this district. There are about 250 fires annually, burning over about 23,000 acres. Apparently a county-wide protective system of at least three towers is the logical forest protection system for the future.

Lee County

Total land area, 260,480 acres; area woodlands on farms, 32,636 acres; area woodlands outside farms, 106,559 acres; total area woodlands, 139,195 acres; percentage of total woodland area on farms, 23%. In the swamps are found the typically coastal plain swamp type of growth such as Gum, Cypress, White Cedar, Poplar, Oak, Ash, Maple, etc. Upon the remainder of the 53% of the timberland of the county the mixed Pine type predominates. Mixed Pine and valuable hardwoods occur, where the moisture allows, upon the better soils. About 200 fires burn over 60,000 acres annually. Lands needing planting total 15,000 acres. Any of the important southern Pines will grow well when planted here. Ash, Poplar, Walnut, and Locust are recommended for planting upon the better soils of the county.

Lexington County

Total land area, 498,560 acres; woodland on farms, 139,637 acres; woodland outside farms, 245,249 acres; total forest area, 384,886 acres. Longleaf and Loblolly Pines predominate with Oak, Ash, Gum, Poplar and

Cucumber in the river swamps. Twenty thousand acres are classed as eroded areas and 30,000 acres are in need of planting. Longleaf, Slash and Loblolly Pines are recommended and Oak, Ash, Poplar, Black Locust among the hardwoods. Forest ownership is mostly small, making difficult the formation of protective associations. Eighty fires annually burn more than 20,000 acres.

McCormick County

Total land area, 242,560 acres; woodland on farms, 77,286 acres; woodland outside farms, 95,079 acres; total area woodland, 172,365 acres. Shortleaf and Loblolly Pines predominate with mixed hardwoods in the swamps. Twenty thousand acres are in an eroded condition and 25,000 acres are in need of planting. Loblolly and Shortleaf Pines are recommended with Black Locust for reclaiming eroded areas. A hundred fires annually burn 20,000 acres.

Marion County

Total land area, 338,560 acres; area of woodlands on farms, 43,270 acres; area of woodlands outside farms, 114,412 acres; total area of woodlands, 157,682 acres; percentage of woodland on farms, 27%. Marion County is bordered on the east by the swamps of the Little Peedee River and on the west by those of the Great Peedee River. Here we find the swamp hardwoods of Oak, Ash, Gum, Maple, Magnolia, and the Cypress-Gum type of Tupelo Gum and Cypress. Adjacent to the swamps there occurs very often another hardwood type including the upland Oaks, Holly, Hickory, White Cedar, Dogwood, and Black Gum. On the dry lands mixed pines occur including Longleaf, Shortleaf, Loblolly. In 1927 the timber cut from the county approximated 67,000,000 bd. ft. Twelve hundred men were employed in forest industries, and wages amounted to about \$1,000,000.00. It is estimated that 42,000 acres may well be planted for future timber production. The great majority of the cut over lands will "seed in" naturally. Farming has been followed rather intensively and there is a comparatively large amount of exhausted land which is out of the range of seed trees. Longleaf Pine, Shortleaf, Slash, Loblolly Pine, Ash, Poplar are recommended for planting. Fires numbering 360 annually burn over 110,000 acres. Marion County is the best tobacco producing county of the state. There is a great need for fuel wood to cure the annual crop. In many cases farmers are buying their fuel wood, burning coal or oil in their tobacco barns.

Marlboro County

Total land area, 332,160 acres; area of woodland on farms, 20,507 acres; area of woodlands outside of farms, 185,441 acres; total area of woodlands, 205,948 acres; percentage of total woodlands on farms, 10%. Extensive timber tracts border the Great Peedee River which forms the western boundary of the county. In this section of the county occur the swamp types of timber. Swamp timberlands also occur along the course of Crooked creek which joins the Peedee River within the boun-

dary of the county. On these areas associations of Gum, Cypress, Oak, Cedar, Poplar, Maple and Ash are found. On better drained alluvial soils are stands of White Oak, Post Oak, Hickory, Holly, Mulberry and Black Gum. The mixed Pines predominate in the woodlands of the drier areas. It is estimated that at least 32,000 acres of the denuded or idle farm land depends upon planting for producing a timber crop. Other areas will be seeded with trees by nature. The southern Pines including Longleaf, Shortleaf, Loblolly and Slash Pines are suggested for planting the waste areas of the uplands. All of these excepting Slash Pine occur naturally throughout the county. Locust for fence posts is recommended for farm planting and the denuded lowland areas will support the planting of Ash and Poplar. Very little of Marlboro County is protected from woods fires as shown by the fact that 300 fires annually burn over about 90,000 acres of land. County organization in fire control is greatly needed and it is believed from the progressive type of farmers and landowners who live there that organization in fire control will be readily accepted.

Newberry County

Total land area, 384,640 acres; woodland on farms, 128,477 acres; woodland outside farms, 123,770 acres; total area woodland 252,247 acres. Shortleaf, Loblolly and Cedar predominate among the conifers, with Ash, Poplar, Gum and Cucumber in the swamps. Twenty-five thousand acres are losing topsoil and suffering from erosion and 40,000 acres are in need of planting. Loblolly, Shortleaf, and Slash are recommended among the Pines, with Black Locust for the production of fence posts and the prevention of erosion, with Ash and Poplar in the swamps. A demonstration forest thinning was made in this county in co-operation with the county agent. The thinning was made in a stand of Loblolly Pine which grew up in an old field used for cotton 16 years ago. Before thinning the stand averaged 1,863 trees to the acre, with diameters varying from 1" to 8" breast high. Seventeen cords of fire wood (1" at small end) were removed, leaving 42.9 cords on the total area of $3\frac{3}{4}$ acres. Number of trees was reduced to 850 to the acre. It was found that diameter growth started to drop off at 10 years of age and that it was now requiring 3.2 years for the average dominant tree to grow 1" in diameter. The object of the experiment was to determine the spacing at which such trees will produce the most rapid growth and special sample plots thinned to 8 x 8, 6 x 6, were laid out to be re-measured periodically. Sixty fires annually burn over 10,000 acres in this county and countywide protection seems to be the solution to the problem.

Oconee County

Total land area of county, 416,000 acres; area of woodland on farms, 137,719 acres; area of woodland outside of farms, 148,462 acres; total woodland area, 288,181 acres. Forest types in order of their predominance are Shortleaf Pine (*P. echinata*) in pure and mixed stands of hardwoods

and scrub pine (*P. virginiana*), Hemlock (*Tsuga canadensis*), Chestnut, Chestnut Oak and Black Locust. The large bulk of the forest land in this county is in the northern half. Total eroded land, 16,755 acres. Estimate 25,000 acres should be planted. Recommend planting Shortleaf Pine, Red and Black Oak, Yellow Poplar and Black Walnut. During the last planting season one plantation of 1,000 Loblolly Pine seedlings was made in this county for demonstration purposes. About 200 fires occur annually, burning over 75,000 acres. Oconee County has in the past supported a large number of sawmills and other wood-using industries. There are still a number of portable mills and a few stationary mills in the northern half of the county. The L. M. Brown Lumber Company of West Union actually practices forest management and fire protection on their lands. They operate a small sawmill cutting 90% or more Pine and own about 3,000 acres in the northern part of the county near Salem. The bulk of the forest land is in large contiguous areas restricted mostly to the northern half of the county. The largest portion of this area is included in the purchase unit boundary of the Nantahala National Forest. The Federal government now owns 43,000 acres of land within this section, above Westminster and Walhalla. The logical method of forest fire protection is that of private protective associations in co-operation with the State and National Forest Services. It might be possible to tie up a private protective system with that of the Federal government. Due to the fact that the Federal government will ultimately purchase all lands within their unit boundary, it is doubtful whether much interest in a private protective association could be aroused on the part of the present owners within that unit.

Orangeburg County

Total land area of 723,840 acres, of which 106,593 are in farm woodlands and 300,638 are in woodlands outside of farms, making a total woodland area of 407,231 acres. The principal types are the Yellow Pine type and the swamp hardwoods containing the following species: Longleaf, Shortleaf, Slash, Loblolly, and Pond Pine; and Gum, Oak, Magnolia, Hickory, Ash, Tulip, Dogwood, Cedar, Holly, and Cypress. It is estimated that 10,000 acres should be planted to Longleaf, Slash and Loblolly pines. Orangeburg County is principally an agricultural county, although the southeastern portion is very well timbered. The greater amount of this timber is of the swamp hardwood type. There is some turpentine being carried on and some logging, but most of the timber has been cut. It is estimated that 300 fires burn over 15,000 acres a year,

Pickens County

Total land area of county, 338,560 acres; area of woodland on farms, 106,022 acres; area of woodland outside of farms, 128,838 acres; total woodland area, 234,860 acres. Forest types and species (same general information as given for Oconee County.) Total eroded land, 20,438 acres. It is estimated 20,000 to 25,000 acres should be planted. Recommend same species as for Oconee County. During the last planting season, one

demonstration planting of 1,000 Loblolly Pine was made in this county. Approximately 200 fires burn over 50,000 to 100,000 acres of land annually. Pickens County, like Oconee, once supported a number of sawmills and other wood-using industries. A large sawmill operated at Pickens until 1928 when it ceased operations due to financial conditions and litigation over land. The bulk of the forest land is in large contiguous blocks in the northern half of the county, practically all of which are in the purchase unit boundary for the Nantahala National Forest. The Federal government owns no land in Pickens County as yet. The Carolina Timber Company, Pickens, now owned by the Hume Interests of Michigan, have 60,000 acres of virgin hardwoods and Pine in a well-blocked tract in the northern part of the county. They also own 5,000 acres of cut-over land lying with this same block. The Saluda Land and Lumber Company own about 600 acres adjoining the Carolina Timber Company and the City of Greenville Watershed along the Greenville-Pickens County line. The protection system recommended and the objections thereto are the same as for Oconee County.

Richland County

Total land area, 480,640 acres; woodland on farms, 90,088; acres woodland outside farms, 289,210 acres; total woodland area, 379,298 acres. Longleaf and Loblolly predominate among the Pines, with Gum, Ash, Poplar and Cucumber in the extensive river swamps. Twelve thousand acres are eroded and 75,000 acres in need of planting. Longleaf, Slash and Loblolly Pines and Ash and Poplar and Black Locust are recommended for planting. Ninety fires annually burn over 50,000 acres. A few rather large holdings indicate that there is some possibility for the organization of small forest protective associations as soon as time and funds permit.

Saluda County

Total land area, 278,400 acres; woodland on farms, 108,612 acres; woodland outside farms, 63,751 acres; total woodland area, 172,363 acres. Shortleaf and Loblolly Pines predominate with Ash, Poplar, Gum and Cucumber along the river bottoms. Twenty thousand acres are in an eroded condition and 25,000 acres in need of planting. Shortleaf, Loblolly, Slash, Longleaf Pines and Black Locust are recommended for planting. Seventy-five fires annually burn over 15,000 acres. The large percentage of woodlands on farms and the small contiguous areas of woodland indicate that a countywide system of fire control must be the solution to the fire problem.

Spartanburg County

Total land area of county, 489,600 acres; area of woodland on farms, 109,471 acres; area of woodland outside of farms, 105,951 acres; total woodland area, 215,422 acres. Shortleaf Pine (*P. echinata*) is found in more or less pure stands aggregating 60% to 75% of the forest area in the county. Mixtures of hardwood such as Red and White Oak, Hickory, very little Yellow Poplar, and lesser commercial species. The upper

north quarter of this county may be classed as semi-mountainous land. This section is subject more or less to annual burning. As a result an unfortunate forest type is taking over the original growth, and the scrub Pine (*P. virginiana*) and scrub hardwoods are predominating a large portion of that forest area. Total eroded land, 28,752. Estimate 30,000 to 35,000 acres should be planted. Recommend Loblolly and Shortleaf Pine, Black Locust, Black Walnut, Red and White Oak, and Yellow Poplar. During the last planting season, seven forest tree plantations were established using the following seedlings: 4,500 Longleaf Pine, 16,200 Loblolly, 4,000 Slash, 1,000 Shortleaf, and 1,000 Black Locust. Approximately 200 fires burn over 5,000 to 8,000 acres annually. Practically all forest lands can be classed as farm woodlands. In general they are in a straggly condition and here and there one frequently finds pure stands of scrub Pine and scrub hardwoods. This condition can be corrected by the planting of more valuable commercial species. Since there are no large contiguous blocks of forest land, only a countywide protection system can be recommended. There are now a number of wood-using industries such as one or two stove mills, a small number of portable sawmills and the Taylor-Colquitt timber treating plant at Spartanburg, which is probably one of the largest in the South. A considerable quantity of oak ties, and pine and cottonwood pulp wood are cut in the county annually.

Sumter County

Total land area, 426,880 acres; area of woodlands on farms, 49,260 acres; area of woodlands outside of farms, 208,000 acres; total area of woodland, 258,172 acres; percentage of total woodland area on farms, 19%. The outstanding manufacturing industries of Sumter County are dependent upon the forests of Pine and the hardwood forests which exist within its borders. The county seat is the location of several planer mills, veneer works, cooperage plant, casket and coffin mill, furniture factory, school equipment plant, and a wood novelty plant. Woods fires alone prohibit the reproduction of Longleaf stands and forests of mixed Pines. The swamp lands support stands of swamp hardwoods of Gum, Oak, Maple, Cypress, Poplar, Cucumber and Magnolia. The White estate at Hillcrest is an example of private forestry which has created much interest. Here fire lines divide the property into small divisions. A forester is employed in fighting fires, growing seedlings and planting waste areas. The Emory W. Clark estate of Pinewood with the co-operation of the State Forest Service is striving to control the fires that occur on that property. Approximately 350 fires burn over 100,000 acres of woodland a year. Natural reforestation would occur upon the greater portion of the idle land of the county if fires were controlled. However, it will be necessary to plant at least 45,000 acres of land which will not seed in naturally. The important southern Pines, Ash, Oak, Walnut, Locust and Poplar, are recommended for planting in Sumter County.

Union County

Total land area of county, 314,880 acres; area of woodland on farms, 82,696 acres; area of woodland outside of farms, 71,818 acres; total wood-

land area, 154,514 acres. Shortleaf Pine (*P. echinata*) occurs in more or less pure stands. Mixtures of various hardwoods are found with the Pine and occasionally run pure on bottoms and along streams. Practically all the woodlands in this county have been cut at least once. There is quite a bit of Red Cedar (second growth) scattered around the county. Total eroded land, 18,405 acres. It is estimated 30,000 to 40,000 acres should be planted. Recommend Loblolly and Shortleaf Pine, Black Walnut, Black Locust, Yellow Poplar, and Red and White Oak. During the last planting season three forest tree plantations were made using the following seedlings: 37,000 Loblolly Pine and 35,000 Shortleaf Pine. The largest plantation was made on the lands of the Union-Buffalo Mills Co. near Union, where 35,000 Loblolly and 35,000 Shortleaf Pine were planted. Approximately 250 fires burn over 6,000 acres annually. The forested areas in this county are probably 90% in small woodlands. Practically all of these woodlands have been cut over at least once. The woodlands have been badly managed, perhaps more so than any other county in the Piedmont region. Increment borings made on the school forest near Jonesville showed that Yellow Poplar (under 12 inches D. B. H.) increased 2 inches in diameter in 2½ to three years. Accordingly this species should be given due consideration in reforesting lowlands, particularly. Since the forest area is chiefly in small woodlands, only a county-wide protection system can be recommended. The farmers are cutting and marketing annually a considerable number of Oak ties; Pine and Cottonwood pulp wood, and Poplar veneer bolts.

Williamsburg County

Total land area, 556,800 acres; area of woodlands on farms, 84,649 acres; area woodlands outside of farms, 286,873 acres; total area of woodland, 371,322 acres; percentage of total woodland area on farms, 22%. The lowlands along the Black River support the usual swamp type of timber for the Peedee district, including the Gums, Oak, Magnolia, White Cedar, Maple. Mixed Pines occur in the higher parts of the county. It is estimated that 36,000 acres of the idle land should be planted in trees. The southern Pines, also Ash and Poplar are recommended for planting. During the year about 600 fires burn over 180,000 acres of woodland. The Carolina Fiber Company, which owns land in this county, has been co-operating with the state in fire control. One tract of 8,300 acres has been successfully protected for the last eight years. The U. S. Forest Service has study plots on this tract. This company has initiated a tree planting program in order to restock idle land not within the reach of seed trees.

York County

Total land area of county, 416,640 acres; area of woodland on farms, 109,696 acres; area of woodland outside of farms, 63,974 acres; total woodland area, 173,670 acres. In general same as for Cherokee County as conditions are almost identical. However, in the southeastern section of the county near Rock Hill, there is a distinct streak of "Blackjack"

land which is covered only with Blackjack Oak. This streak runs across the northeast corner of Chester County and extends into Lancaster County. There are approximately 5,000 acres of this type land in York County. Total eroded land 37,362 acres. It is estimated 40,000 to 45,000 acres should be planted. Recommend Loblolly and Shortleaf Pine, Black Walnut, Black Locust, and Red and White Oak. No forest plantations have been established in this county to date. Effort should be made to establish some during this coming planting season. Approximately 200 fires burn over around 5,000 acres annually. This county in the past has produced a considerable amount of hardwood and Pine lumber. At present a fairly large stationary sawmill is located at Fort Mill near Rock Hill. A small portion of the upper part of the county may be classed as semi-mountainous land. The forest area is largely in small woodlands, all of which have been cut over at least once. Since there are no large contiguous blocks of forest land, only a county-wide protection system can be recommended.

SUMMARY OF ACREAGES BY COUNTIES

County	Total Forest Area	Area Need- ing Planting	Eroded Areas	No. of Fires	Area
Abbeville	168,313	30,000	25,776	150	6,000
Aiken	526,042	50,000	10,000	125	30,000
Allendale	185,147	10,000	.....	200	25,000
Anderson	196,011	45,000	40,595	175	6,000
Bamberg	125,342	6,000	.....	200	20,000
Barnwell	185,811	10,000	.....	150	15,000
Beaufort	327,110	3,500	.....	125	10,000
Berkeley	649,216	5,000	.....	1,000	200,000
Calhoun	168,947	8,000	.....	100	5,000
Charleston	459,128	3,000	.....	250	10,000
Cherokee	115,547	18,000	15,207	.....	.....
Chester	215,943	27,000	27,803	.....	.....
Chesterfield	375,739	30,000	.....	500	150,000
Clarendon	258,338	32,000	.....	500	140,000
Colleton	562,683	2,500	.....	600	150,000
Darlington	249,084	24,000	.....	300	80,000
Dillon	170,077	47,000	.....	130	40,000
Dorchester	311,534	3,000	.....	300	15,000
Edgefield	235,569	30,000	15,000	90	22,000
Fairfield	354,334	35,000	90,000	.....	.....
Florence	297,931	30,000	.....	300	90,000
Georgetown	433,827	19,000	.....	600	150,000
Greenville	273,259	32,000	24,199	225	15,000
Greenwood	181,390	30,000	30,000	60	12,000
Hampton	231,950	6,000	.....	250	10,000
Horry	493,360	25,000	.....	660	180,000
Jasper	328,572	3,500	.....	350	35,000
Kershaw	250,301	22,000	.....	200	60,000
Lancaster	188,446	48,000	.....	150	40,000
Laurens	240,752	140,000	35,991	250	23,000
Lee	139,195	15,000	.....	200	60,000
Lexington	384,886	30,000	20,000	80	20,000
McCormick	172,365	25,000	20,000	100	20,000
Marion	157,682	42,000	.....	360	110,000
Marlboro	205,948	32,000	.....	300	90,000
Newberry	252,247	40,000	25,000	60	10,000
Oconee	288,161	25,000	16,755	200	75,000
Orangeburg	407,231	10,000	.....	300	15,000
Pickens	234,860	23,000	20,438	200	75,000
Richland	379,298	75,000	12,000	90	50,000
Saluda	172,363	25,000	20,000	75	15,000

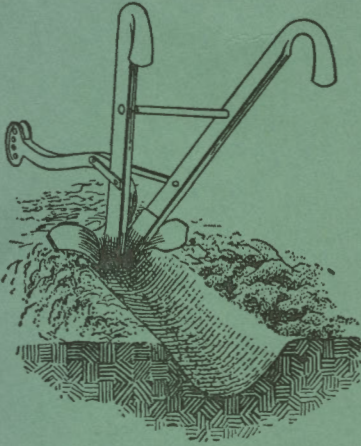
SUMMARY OF ACREAGES BY COUNTIES (*Continued*)

County	Total Forest Area	Area Need- ing Planting	Eroded Areas	No. of Fires	Area
Spartanburg	215,422	32,000	28,752	200	7,000
Sumter	258,172	45,000	.....	350	100,000
Union	154,514	35,000	18,405	250	6,000
Williamsburg	371,322	36,000	.....	600	180,000
York	173,670	43,000	37,362	200	5,000
	<hr/> 12,827,039	<hr/> 1,306,500	<hr/> 533,283	<hr/> 11,785	<hr/> 2,403,000

DATE DUE



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(A) PLOW FURROWS

(B) OPEN A SLIT IN THE
FURROW WITH A DIBBLE
(CROSSWISE AS SHOWN)
OR PARALLEL WITH FURROW(C) HOLD TREE IN THE SLIT
CLOSE IT AT THE BASE(D) CLOSE TOP OF SECOND
SLIT WITH THE FOOT

PLANTING WITH THE "DIBBLE"

REPRODUCED FROM U. S. DEPARTMENT OF AGRICULTURE BULLETIN No. 1256

TREE PLANTING IS SIMPLE, RAPID AND INEXPENSIVE—A MAN AND A BOY CAN EASILY PLANT FROM 1000 TO 1500 IN A SINGLE DAY—WITH CARE IN PLANTING 75% OF THE TREES SHOULD SURVIVE.